

REMARKS

We have amended the claims to address the examiner's concerns and to more particularly point out and distinctly claim the invention. We have canceled claim 23-30 and 96 and we have added a new claim 98 that depends from claim 1. Upon entering the amendments, claims 1, 4-8, 10-22, and 97-98 will be pending in this application.

The examiner rejected claims 23-30 under 35 U.S.C. §101 as being directed to non-statutory subject matter. We have addressed this objection by canceling those claims, without prejudice to being able to pursue them at a later date.

The examiner rejected claims 1, 4-8, 10-30 and 97 as not falling within one of the four statutory categories and not being tied to another statutory category or not transforming underlying subject matter to another state or thing.

The examiner argues that the claims do not transform an underlying subject matter. But we disagree. We submit that signals are physical entities that are detectable, that have a physical impact on other physical objects, e.g. antennas; and that they can be transformed into other forms by, for example, modulating one signal onto another signal. Multiplying signals (or combining two signals or modulating one signal by another signal) produces a transformed signal which is physically and detectably different from the original signal. So, signal processing of the type that is recited in claim 1 does indeed involve transforming subject matter to another state.

The examiner further argues that the step of multiplying one carrier signal by another signal is a process that could be completely performed mentally, verbally or without a machine. And that is evidence that a transformation to another state is not involved. But again we disagree. Multiplying signals, as recited in claim 1, is not an act that can be done mentally or verbally or without a machine.

The examiner objected to claim 96 as being directed to a single means. We have addressed this objection by canceling claim 96.

The examiner objected that the phrase “the plurality of subcarrier modulation signals” found in claim 5 lacked antecedent basis. We have addressed that concern by amending the relevant phrase in claim 5 to read “wherein at least one of the at least one subcarrier modulation signal.”

The examiner raised various objections regarding claims 5-7, 11-12, 24-26 and 96. We have amended (or canceled) those claims to address the examiner’s concerns.

The examiner objected that the “computer readable storage” which is recited in claim 97 lacked antecedent basis in the specification. We note, however, that computer readable storage was supported by claim 97 which was originally filed in the International Application (PCT/GB2004/003745). Since the claims are considered to be part of the disclosure, we submit that claim 97 does have antecedent basis, at least as far back as the filing of the International application (PCT/GB2004/003745).

The examiner pointed out that Appendix A which is referred to in the specification was not of record and thus the application was incomplete. We are submitted along with this response an Information disclosure Statement which includes a copy of the reference cited on page 7 of the specification (Pratt & Owen, BOC Modulation Waveforms, ION Proceedings, GPS/GNSS 2003 Conference, September 9-12, 2003, Portland OR.). This article is not necessary for enablement or to support the claims. It was cited to merely demonstrate the relationship between embodiments of the invention and a measure of interference known as Spectral Separation Coefficients. The specification is complete without the appendix. Moreover, we note that the contents of that article were incorporated by reference on page 7.

The examiner pointed out that the oath/declaration and/or data sheet failed to identify the International Application. We are submitting herewith a revised Application Data Sheet which identifies the International Application.

The examiner rejected claims 1,4, 23 and 96 under 35 U.S.C. §102(b) as anticipated by U.S. 5,684,833 to Watanabe. The examiner argues that Watanabe discloses a method and apparatus comprising multiplying a carrier signal by a modulation signal, the modulation signal comprising m

amplitude levels, where $m > 2$.” And he directs our attention to col. 17 lines 9-10 and to col. 8, line 48.

We note, however, that the modulation signal in Watanabe is not a “subcarrier modulation signal” as required by the claims. Watanabe’s modulation signal is a multilevel data signal.

One skilled in the art understands that a data signal is not a subcarrier or a subcarrier modulation signal. The difference between a data signal and a subcarrier signal within the context of embodiments of the present invention can be clearly understood with reference to, for example, the E1, E5 and E6 signals as are well known in the art. For example, the attached paper (Hein et al., Status of Galileo Frequency and Signal Design, published in 2002), clearly indicates that the terms subcarrier signal and data signal to refer to different entities. The paper can be obtained from the following location on the Internet:
<http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.114.1868>.

Page 3 of the paper, under the heading “Modulation Schemes” gives, in table 1, a description of the “main modulation parameters for Galileo signals.” It can be seen that “ $D_X^Y(t)$ is the data signal on the Y channel in the X frequency band” and that “ $Sc_X^Y(t)$ is the rectangular subcarrier on the Y channel in the X frequency band.” Therefore, the terms “data signal” and “subcarrier signal” are not synonymous.

For at least the reasons stated above, we believe that the claims are in condition for allowance and therefore ask the Examiner to allow them to issue.

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Respectfully submitted,

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